tions (to 4x and 6x), a phenomenon which I call cytocatalytic evolution (Lewis, in press).—*Walter H. Lewis, Department of Botany, Washington University and Missouri Botanical Garden, St. Louis.*

CLAYTONIA CAROLINIANA VAR. SPATULIFOLIA (SALISBURY) LEWIS, STAT. NOV. (PORTULACACEAE)

Claytonia caroliniana Michx. (Fl. Bor.-Amer. **1:** 160, 1803) var. **spatulifolia** (Salisb.) W. H. Lewis, stat. nov., based on *C. spatulaefolia* Salisb., Parad. Lond. *pl. 71*, 1807.

a. Blades of paired cauline leaves ovate (S.A. Fig. 3-4) to elliptic (S.A. Fig. 38-39); widespread at lower elevations in mountains of eastern North America to Minnesota .....var. *caroliniana*

aa. Blades of paired cauline leaves narrowly elliptic (S.A. Fig. 1-2) to narrowly ovate (S.A. Fig. 36-37) and obovate (S.A. Fig. 45-46); highest elevations of the Appalachians .....var. *spatulifolia*

Michaux described *C. caroliniana* with short-oval (cauline) leaves scarcely ½″ long from material probably collected in eastern Tennessee, ESE of Johnsborough on route to Iron Mountain (cf. Thwaites, André Michaux's travels in Kentucky, 1793-96, *In Early Western Travels 1748-1846*, **3:** 98, 1904). The description of cauline leaves matches the specimen housed in the Michaux Herbarium (P) recently sketched for me by M. Gérard G. Aymonin and reproduced here (Fig. 1). This represents the widespread broad-leafed variety which varies from ovate to elliptic (Fig. 2). The second variety is characteristically found at higher elevations in eastern North America, particularly common above 1,000 m in the southern Appalachian Mountains; it is well illustrated by W. Hooker in plate 71 of the *Paradisus Londinensis* (Fig. 3) though the specific name chosen by Salisbury describes the subspatulate basal leaves. Figures 4-5 show other common leaf shapes of the var. *spatulifolia* which resemble those of *C. virginica* L. except that they are much shorter. Where this species and the var. *spatulifolia* coexist in Tennessee, North Carolina and West Virginia, I observed no intermediate plants and the two taxa invariably differed in chromosome number. At lower elevations the var. *caro-*

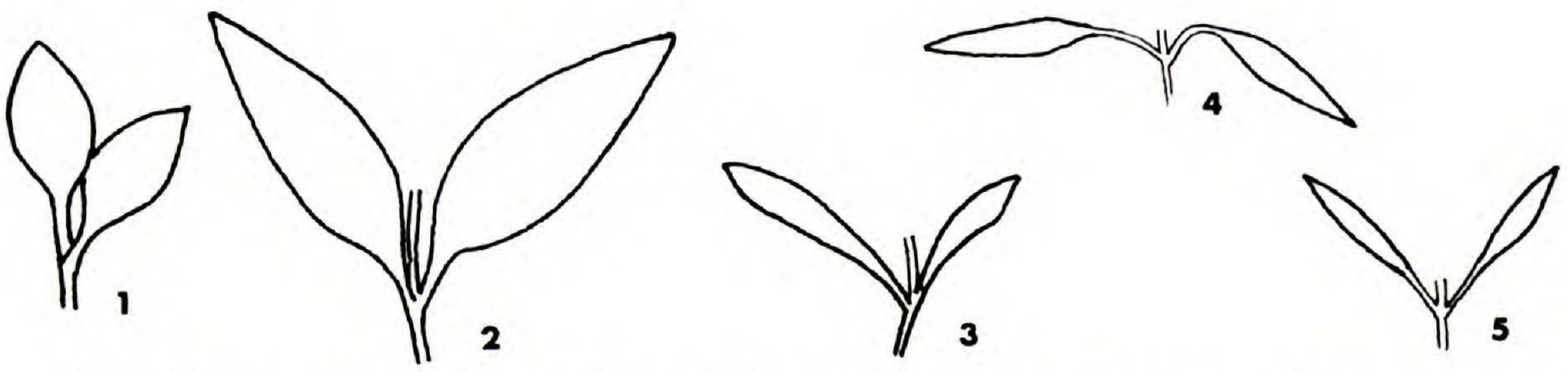

Fig. 1-5. Outline sketches (×1/2) of the single pair of cauline leaves of *C. caroliniana*. Fig. 1-2. Var. *caroliniana*. Fig. 1. *Michaux s.n.* (P). Fig. 2. *Soper & Fleischmann 6309*, Simcoe Co, Ontario (MO). Fig. 3-5. Var. *spatulifolia*. Fig. 3. *C. spatulifolia* by W. Hooker from Parad. Lond. *pl. 71*. Fig. 4. *Lewis 6675* (MO). Fig. 5. *Lewis 6660* (MO).

liniana and *C. virginica* also coexist, but again no intermediate was found from localities in these states.

Representative specimens of *C. caroliniana* var. *spatulifolia* (all MO): *Lewis 6652, 6653, 6654, 6657* (Sevier Co, Tennessee); *6659, 6660* (Swain Co, North Carolina); *6664, 6665, 6666, 6667* (Haywood Co, North Carolina); *6668* (Madison Co, North Carolina); *6675, 6677* (Preston Co, West Virginia).—*Walter H. Lewis, Missouri Botanical Garden, St. Louis.*

ADDENDUM: SCHLECHTER'S NEW GUINEA DUPLICATES OF LIPARIS (ORCHIDACEAE) AT THE MISSOURI BOTANICAL GARDEN

In an imaginative piece of detective work Woods (Notes Royal Bot. Gard. Edinburgh **26:** 361-364, 1966) describes the results of his search for Dr. R. Schlechter's orchid duplicates, the originals of which were destroyed by fire following the allied air raid on Berlin during 1-2 March 1943. The genus *Liparis* L. C. Rich. was selected as a test case.

Twenty-eight herbaria (including Edinburgh) were sent data sheets listing the 54 New Guinea species largely described by Schlechter from his own collections [in Fedde, Repert. sp. nov. regni veg. Beih. **1:** 181-220 (*Liparis*), 1911]. Recipients were requested by Woods to check the lists with their herbarium material and to amend and return the circulars. Response was apparently unanimous.

Five American herbaria were solicited, viz. Orchid Herbarium of Oakes Ames at Harvard's Botanical Museum (AMES), Field Museum, Chicago (F), New York Botanical Garden (NY), University of California at Berkeley (UC) and the U. S. National Museum (US). The results revealed that not a single sheet of New Guinea specimens of *Liparis* collected by Schlechter existed in the general collections of the American herbaria surveyed. Only the Ames Orchid Herbarium yielded results, and then just second to Leiden in total number of collections. The Missouri Botanical Garden Herbarium was not canvassed. Our general exchange with Berlin prior to World War II, however, was perhaps greater than any other American herbarium and with good reason, for the long-time Curator (1913-1948), Dr. Jesse M. Greenman, studied under Professor A. Engler at Berlin and received his Ph.D. there in 1901. Apparently this personal contact was a major factor in developing or at least maintaining a flow of specimens from Germany to St. Louis. This is well illustrated by the MO holdings of *Liparis* collected by Schlechter in New Guinea: a total of 18 specimens or more than F, NY, UC, US and the large European herbaria at Copenhagen, Munich, Uppsala, Utrecht, Vienna and Zurich, all which have none, and far more numerous than the totals at Paris and Brussels.

The species and specimens at MO, with Schlechter's numbers, are listed below.

Liparis altigena Schltr., *18706* (type), MO 923909.
L. anemophila Schltr., *17100,* MO 923920.
L. calcaria Schltr., *18027* (type), MO 923911.